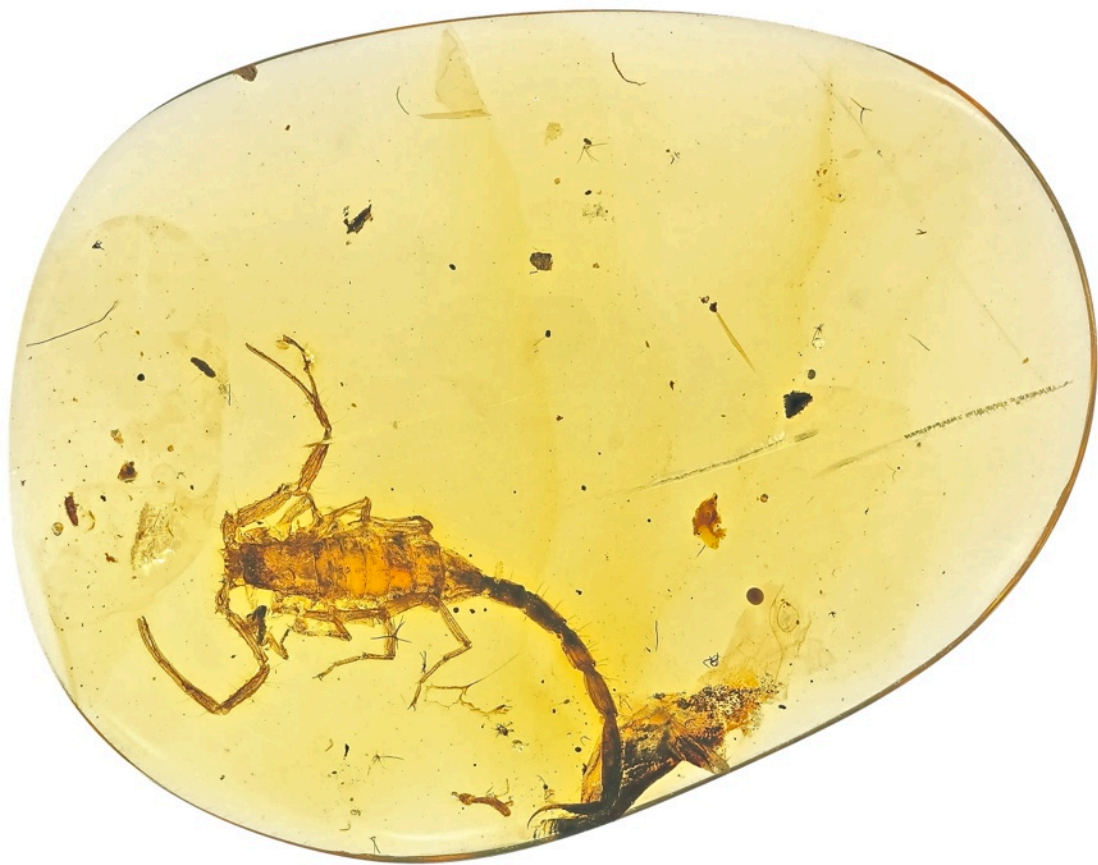


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A particular new species for the genus *Palaeoburmesebuthus* Lourenço, 2002 from Burmite (Scorpiones: Palaeoburmesebuthidae)

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Keywords:

Scorpiones;
Palaeoburmesebuthus;
sarahmeyerae;
new species;
taxonomy;
description;
variability;
fossil;
Burmite.

Abstract. – A new species is described for the genus *Palaeoburmesebuthus* Lourenço, 2002. The new species is characterized by a unique disposition of the dorsal trichobothria of the femur. This new description confirms the family Palaeoburmesebuthidae as one of the most speciose groups among those known from Early Cretaceous Burmite.

Lourenço W. R. & Velten J., 2025. – A particular new species for the genus *Palaeoburmesebuthus* Lourenço, 2002 from Burmite (Scorpiones: Palaeoburmesebuthidae). *Faunitaxys*, 13(37): 1 – 5.

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Introduction

The first scorpion to be found and described from the Early Cretaceous amber of Myanmar (Burmite), was one element of the genus *Palaeoburmesebuthus* Lourenço, 2002, placed in an *Incertae familiae*, but subsequently accommodated in its own family Palaeoburmesebuthidae Lourenço, 2015 (Lourenço, 2002, 2015). The elements of this genus proved to be one of the most speciose groups among those present in Burmite (Lourenço, 2023), however their number was clearly surpassed by those of other genera such as *Betaburmesebuthus* Lourenço, 2015 (Lourenço & Beigel, 2015), another member of the family Palaeoburmesebuthidae. In this contribution a new species of *Palaeoburmesebuthus* is described. This new description confirms, once again, the high degree of scorpion diversity in the Burmese amber-producing forests (Lourenço, 2023).

Material and methods

The specimen investigated, most certainly a pre-adult male, is preserved in a very clear block of pale-yellow amber, measuring 18 x 14 x 3 mm. Only some small insects and some vegetal debris are also observed, allowing the observation of most characters. The schematic drawings provided are interpretations of what was observable. Illustrations and measurements were produced with the aid of a Wild M5 stereomicroscope equipped with a drawing tube and an ocular micrometre. Measurements follow Stahnke (1970) and are given in mm. Trichobothrial notations follow Vachon (1974). Other morphological terminologies mostly follow Hjelle (1990). Trichobothria are definitely recorded only when their bothria (areoles) could be observed. Other trichobothria may be suggested by the presence of transverse hairs.

Taxonomic treatment

Superfamily **Buthoidea** C. L. Koch, 1837

Family **Palaeoburmesebuthidae** Lourenço, 2015

Genus *Palaeoburmesebuthus* Lourenço, 2002

Palaeoburmesebuthus sarahmeyerae Lourenço sp. n.

(Fig. 1-9)

ZooBank: <https://zoobank.org/658FB45E-C890-43F2-94E3-4675FBDDAAB6>

Diagnosis for the new species. – General morphology similar to that of other species of the genus *Palaeoburmesebuthus* Lourenço, 2002, but showing more similarities with *Palaeoburmesebuthus knodeli* Lourenço, 2018. The following combination of characters can be used to diagnose the new species. Sternum sub-pentagonal. Tergites with three carinae, the lateral one rather inconspicuous; granulation moderately to weakly marked. Sternites with small, oval to rounded spiracles. Metasomal segments I and II with 10 carinae; III-IV with 8 carinae; V with 5 carinae; setation on all metasomal segments moderately marked. Telson granular, without a subaculear tubercle. Pectines large and long, with 18-x teeth. Trichobothrial pattern can be globally observed, with elements clearly fitting those of extant buthid type A (Vachon, 1974). Femur with 5 dorsal, 2 external and 4 internal trichobothria disposed in alpha (α) configuration (Vachon, 1975); external trichobothria in a very marked proximal position with **e**₂ at the same level as **d**₅. Patella with one internal and 5 dorsal trichobothria; 5-6 external trichobothria are suggested by the presence of fine setae; chelal trichobothria well observable: chela hand with **Eb**₁₋₃, **Esb**, **Est**, **Et**; fixed finger with **eb**, **esb**, **est**, **et**, **db**, **dt**; **it** not observable. Tibial spurs present on legs III and IV, moderately marked.

Reviewer: Eric Ythier (BYG Taxa, France) - ZooBank: <https://zoobank.org/06FD0852-A88E-49E5-B8E6-E1494B86C4E1>



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Type locality and horizon. – Myanmar (Burma), Kachin; precise locality unknown; Lower Cretaceous.

Patronym. – The specific name honours Mrs Sarah Meyer (Wangenried, Switzerland), who supported, together with Mr André Schmidt, the present study.

Depository. – The type specimen is deposited in the collections of Mr André Schmidt (Zofingen, Switzerland).

Description

Coloration. – Yellow to slightly reddish-yellow; carapace and tergites yellow; metasomal segments reddish-yellow; telson dark reddish; aculeus reddish; pedipalps and legs yellow to pale yellow. Ventral aspect yellow; pecten yellow to reddish-yellow.

Morphology. – Carapace elongated; anterior margin slightly concave; ocular tubercle anterior to the centre of the carapace; three lateral eyes; carinae, granulations and furrows moderately to weakly marked. Sternum sub-pentagonal. Mesosomal tergites moderately to weakly granular, with one median carina and two very inconspicuous lateral carinae; VII with five moderately to strongly marked carinae. Pectines: only one pecten is observable with 18 teeth; fulcra inconspicuous. Sternites weakly granular to smooth, with small, oval to almost rounded spiracles. Metasomal segments I to IV slightly rounded, with 10-10-8-8 carinae; segment V slender, with five carinae; dorsal carinae of segments I-IV with only minute spinoid granules; dorsal aspect of segments I to V weakly depressed; setation on all segments

moderately marked. Telson with a long, slim pear-shaped vesicle; moderately granular, with vestigial ventral and lateral carinae; absence of any subaculear tubercle; aculeus very long and weakly curved; setation weakly marked. Cheliceral dentition similar to that of buthoids (Vachon, 1963). Pedipalp femur pentacarinat; patella with 6-7 carinae; internal face of femur and patella with only minor spinoid granules. Chela slender and not granular with weak carinae. Setation of pedipalps almost absent. Trichobothriotaxy similar to type A (Vachon, 1974) of extant buthids: dorsal trichobothria of femur disposed in alpha (α) configuration (Vachon, 1975); for details refer to diagnosis. Tibial spurs present on legs III and IV, moderately marked.

Morphometric values (mm) of male holotype of *Palaeoburmesebuthus sarahmeyerae* Lourenço **sp. n.**

– **Total length** 10.62 (including telson).

– **Carapace**

length 1.34;
anterior width 0.74;
posterior width 1.07.

– **Mesosoma** length 2.81.

– **Metasomal segments**

I: length 0.73, width 0.47;
II: length 0.81, width 0.41;
III: length 0.87, depth 0.41;
IV: length 1.05, depth 0.37;
V: length 1.47, depth 0.34.

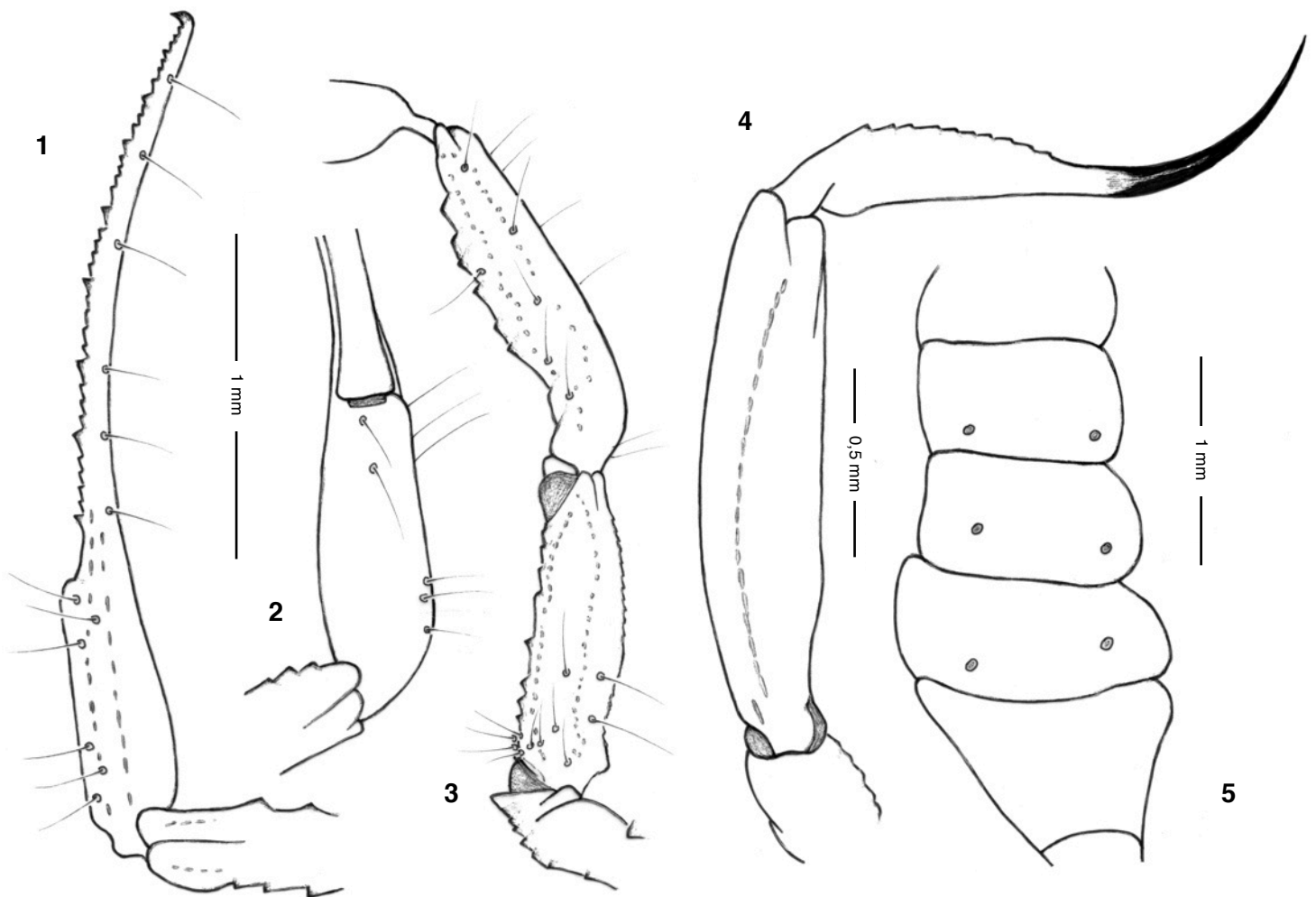


Fig. 1-5. *Palaeoburmesebuthus sarahmeyerae* Lourenço **sp. n.** Male holotype.

1-3. Trichobothrial pattern. **1-2.** Chela, dorso-external and ventral aspects. **3** Femur and patella, dorsal aspect. **4.** Metasomal segment V and telson, lateral aspect. **5.** Sternites III-VII with spiracles.

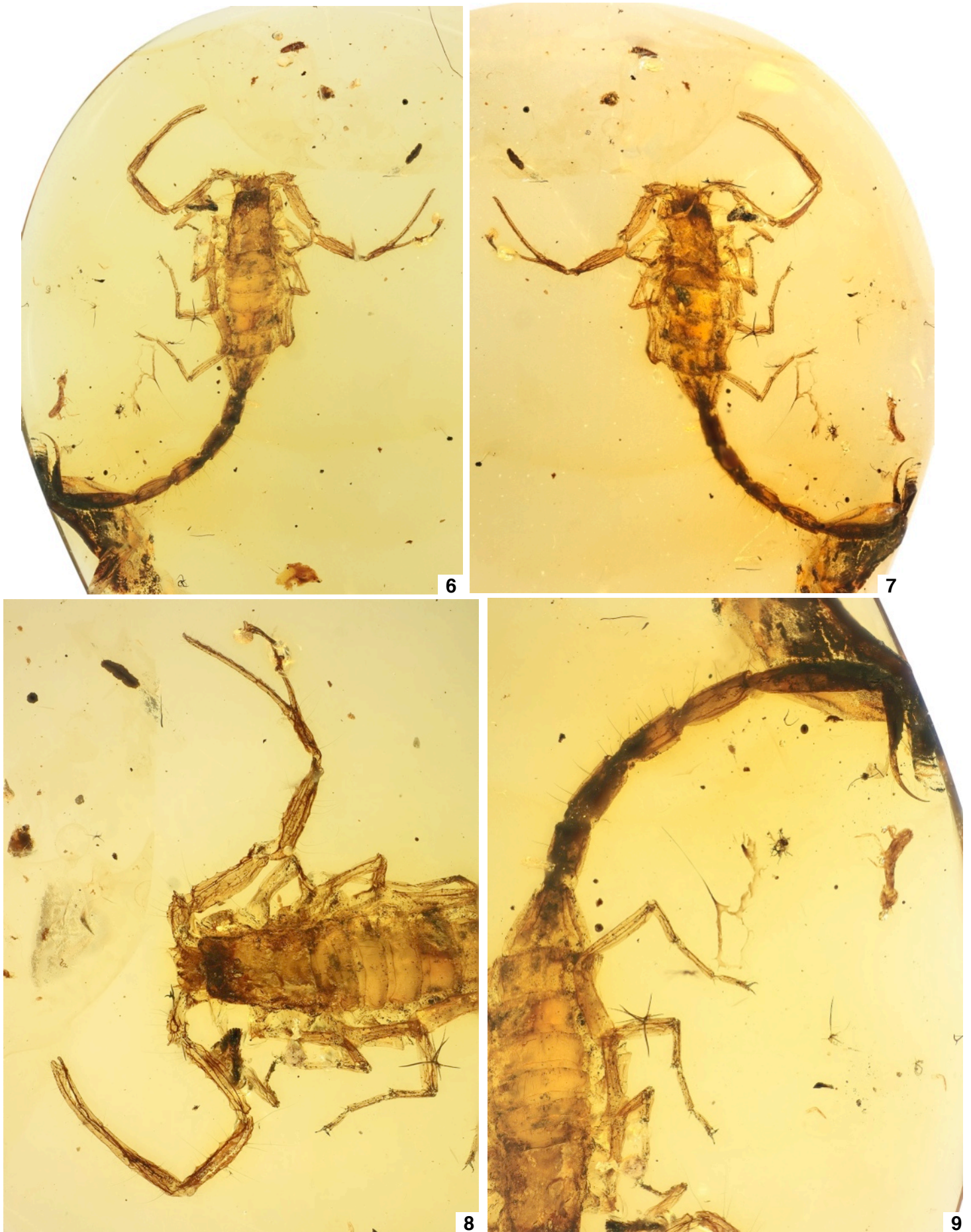


Fig. 6-9. *Palaeoburmesebuthus sarahmeyerae* Lourenço **sp. n.** Male holotype.

6-7. Habitus. **6.** Dorsal aspect. **7.** Ventral aspect. **8.** Carapace and pedipalps in detail. **9.** Metasomal segments and telson in detail.



Fig. 10. *Chaerilobuthus* (aff.) *complexus*. Dorso-lateral aspect.



Fig. 11. *Chaerilobuthus* (aff.) *serratus*. Lateral aspect.

– **Telson** length 1.54.

– **Vesicle** depth 0.21.

– **Pedipalp**

femur length 1.14, width 0.21;
patella length 1.21, width 0.27;
chela length 2.14, width 0.21;
movable finger length 1.54.

Relationships. – The new species can be distinguished from the other species of the genus and in particular from *P. knodeli* by the following characters:

- (i) very elongated telson without a subaculear tooth,
- (ii) spiracles almost round,
- (iii) trichobothria e_2 and d_5 of the femur situated at the same level.

Other species also examined during this study

Genus *Chaerilobuthus* Lourenço & Beigel, 2011
(Family Chaerilobuthidae)

During this study, two other very small juveniles with respectively total lengths of 5.21 and 4.54 mm were studied. These specimens are included in very clear rounded pieces of amber, however in account of their position inside the resin and the presence of numerous bubbles, a precise observation of most characters proved to be impossible, preventing any final identification to the species level. These specimens are clearly characterised by the shape and size of the telson, the absence of eyes, the typical carinae on femur, patella and chela and the

size of pectines, which confirms that they belong to the genus *Chaerilobuthus*. Identification of sexes cannot be clearly provided. Only possible affinities can be suggested, with *Chaerilobuthus complexus* Lourenço & Beigel, 2011 for the first specimen and with *Chaerilobuthus serratus* Lourenço, 2016 for the second specimen (Fig. 10-11). This type of situation attests about the difficulties to bring precise identifications, in particular with not quite well-preserved specimens, and this even for experts who have most available data on their hands. This can also clearly suggest that studies performed by non-experts on scorpions and/or Burmite elements are probably full of misidentifications.

Acknowledgements

We are most grateful to Alexander Beigel (Aachen, Germany) for the preparation of several of the photos which illustrated the new species.

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Authors contribution ¹

Publisher Correspondence. – WL

Writing the article. – WL

Description. – WL

Article proofreading. – WL

Bibliographic work. – WL

Material study. – WL & JV

Author of the figures. – WL (Fig. 1–5)

¹ WL = Wilson R. Lourenço – JV = Jürgen Velten

Résumé

Lourenço W. R. & Velten J., 2025. – Une nouvelle espèce particulière pour le genre *Palaeoburmesebuthus* Lourenço, 2002 de l'ambre Crétacé de Birmanie (Scorpiones : Palaeoburmesebuthidae). *Faunitaxys*, 13(37): 1 – 5.

Une nouvelle espèce est décrite pour le genre *Palaeoburmesebuthus* Lourenço, 2002. La nouvelle espèce est caractérisée par une disposition singulière des trichobothries dorsales du fémur. Cette nouvelle description confirme la position de la famille des Palaeoburmesebuthidae comme l'un des groupes les plus riches en espèces, parmi ceux connus de l'ambre Crétacé du Myanmar.

Mots-clés. – Scorpiones, *Palaeoburmesebuthus*, *sarahmeyerae*, nouvelle espèce, taxonomie, description, variabilité, fossile, Ambre Birman.

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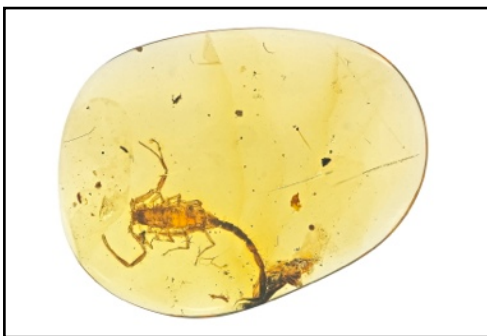


Illustration de la couverture :

Palaeoburmesebuthus sarahmeyerae Lourenço **sp. n.** in the stone; dorsal aspect.

Crédits:

Wilson R. Lourenço : Fig. 1-5.

Alexander Beigel : Fig. 6-11 & couverture.